AD-A099 855 NATIONAL AVIATION FACILITIES EXPERIMENTAL CENTER ATL--ETC F/G 1/2
LOS ANGELES INTERNATIONAL AIRPORT DATA PACKAGE NUMBER 1, AIRPOR--ETC(U)
NOV 78

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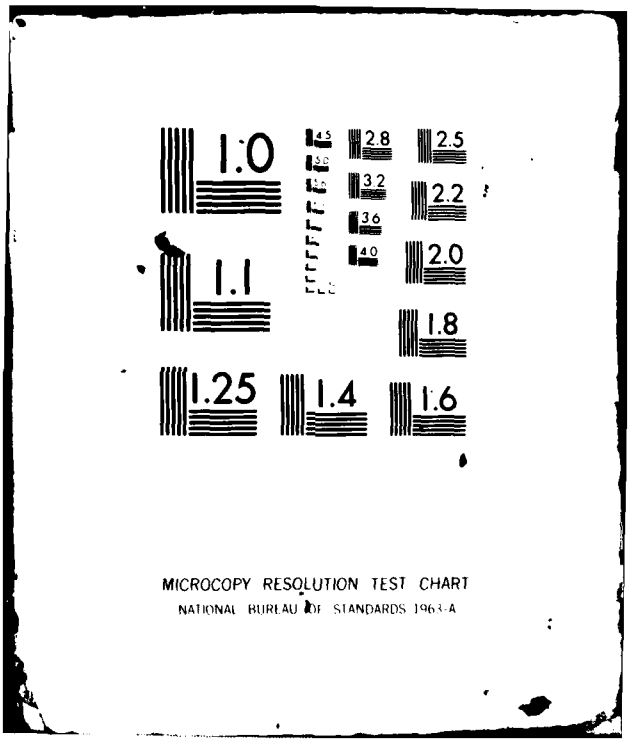
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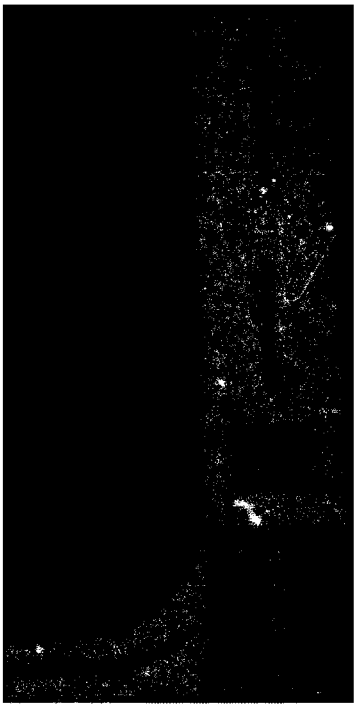
4.5
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A



Attachment A

LOS ANGELES AIRPORT CONFIGURATIONS

Los Angeles International Airport

Los Angeles
Airport Improvement Task Force Delay Studies

November 1978

Los Angeles Airport Configuration

There are three basic configurations (for the airport) selected for study by the Los Angeles Task Force. All the experiments considered in the technical plan can be performed using one of the ~~following~~ configurations. The variation of the input (such as runway assignments for arrivals and departures) can control the experiment to reflect the desired conditions of the test.

The three configurations are:

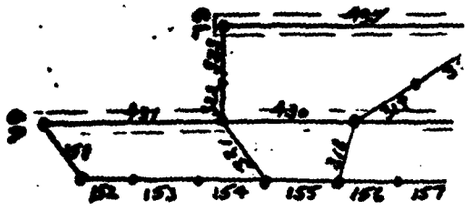
	Model Runway No.			
Configuration	1	2	3	4
A. Runways	24R	24L	25R	25L
B. Runways	6R	7L	24L	25R
C. Runways	6R	6L	7R	7L

The link-node diagram for the airport required to develop the route structure for each configuration is shown in figure 1.

A description of the three configurations is shown in figures 2, 3, and 4. The airfield physical characteristics available at the present time are given after each illustration.

Arrival Fix identification and codes are:

Fix	Fix Name	Code
T	Ontario	1
G	Seal Beach	2
V	Ventura	3
F	Fillmore	4
VNY	Van Nuys	5
NE	NE Quadrant	6
SE	SE Quadrant	7
NW	NW Quadrant	8



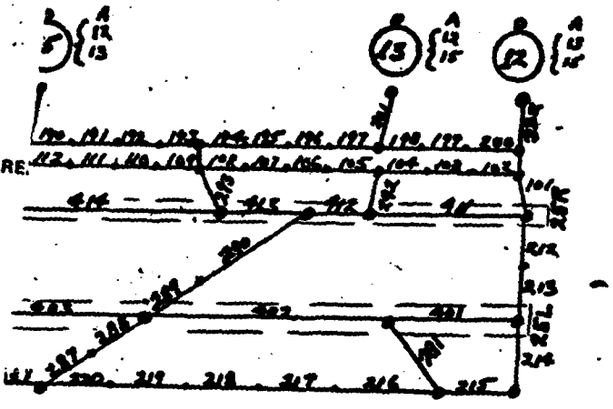
LEGEND

AIRLINE MAINTENANCE/CARGO AREA

GENERAL AVIATION BASING AREA

HOLDING AREA

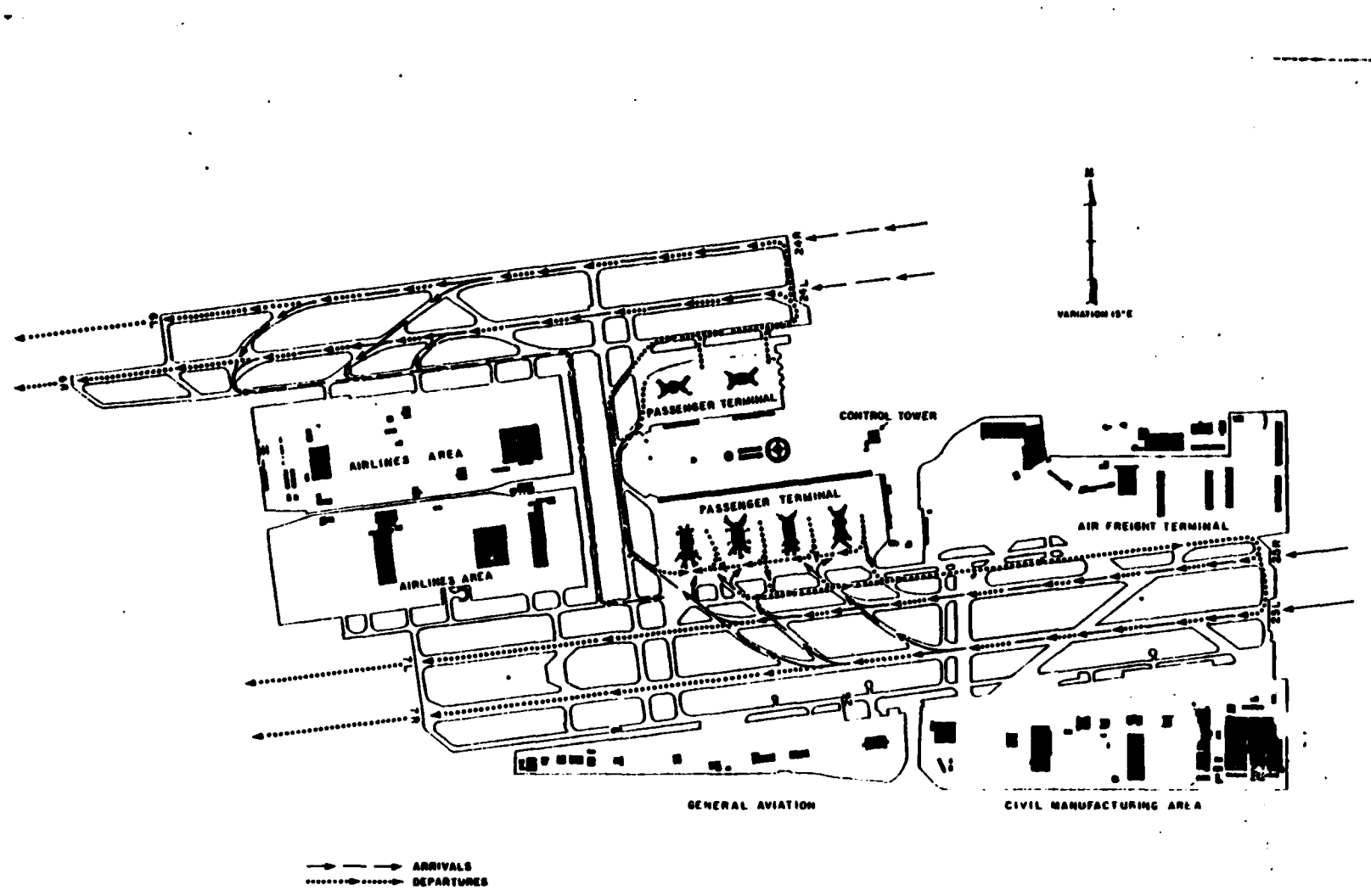
APRON AREA



SCALE: 1" = 842'

DATE: 9/27/78

REVISION 1: 10/2/78 (GATES & LIGHTS TO AIRFIELD)



Configuration A

Figure 2 ARRIVAL/DEPARTURE TAXI ROUTES

R.Y NAMES

24R 24L 25R 25L

R.Y END LINKS

432 423 411 401

R.Y XING LINKS

LOS ANGELES CONFIGURATION A

2	306
2	311
2	316
2	319
2	322
2	285
2	276
2	273
2	270
2	267
2	263
2	262
2	258
2	265
2	283

R.Y EXIT DISTANCES

21

307	2580	312	4500	317	4501	320	6400	323	8290
145	2200	305	2600	310	4000	313	4600	315	5500
318	7500	277	5350	274	6500	271	7550	268	7820
284	3000	275	4280	272	5700	269	6150	266	7780
262	8250								

TAXIWAY TWO-WAY

002	
359	331
002	
331	359
002	
355	206
002	
206	355
002	
353	205
002	
205	353
002	
352	204
002	
204	352
002	
361	146
002	
146	361

003
362 302 301
003
301 302 362
005
362 302 301 300 299
005
299 300 301 302 362
007
340 339 338 337 336 146 361
007
361 146 336 337 338 339 340
009
333 223 224 225 226 227 228 229 230
009
230 229 228 227 226 225 225 223 333
003
357 177 360
003
360 177 357
004
357 177 360 176
004
176 360 177 357
006
357 177 360 176 250 366
006
366 250 176 360 177 357
005
330 126 359 125 357
005
357 125 359 126 330
004
331 359 125 357
004
357 125 359 331
004
114 115 116 350
004
350 116 115 114
005
113 114 115 116 350
005
350 116 115 114 113
003
206 355 208
003
208 355 206
003
205 353 210
003
210 353 205
004
204 352 211 351
004
351 211 352 204
003
203 185 350
003
350 185 203
006
202 113 114 115 116 350
006
350 116 115 114 113 202

RWY EXIT SELECTION

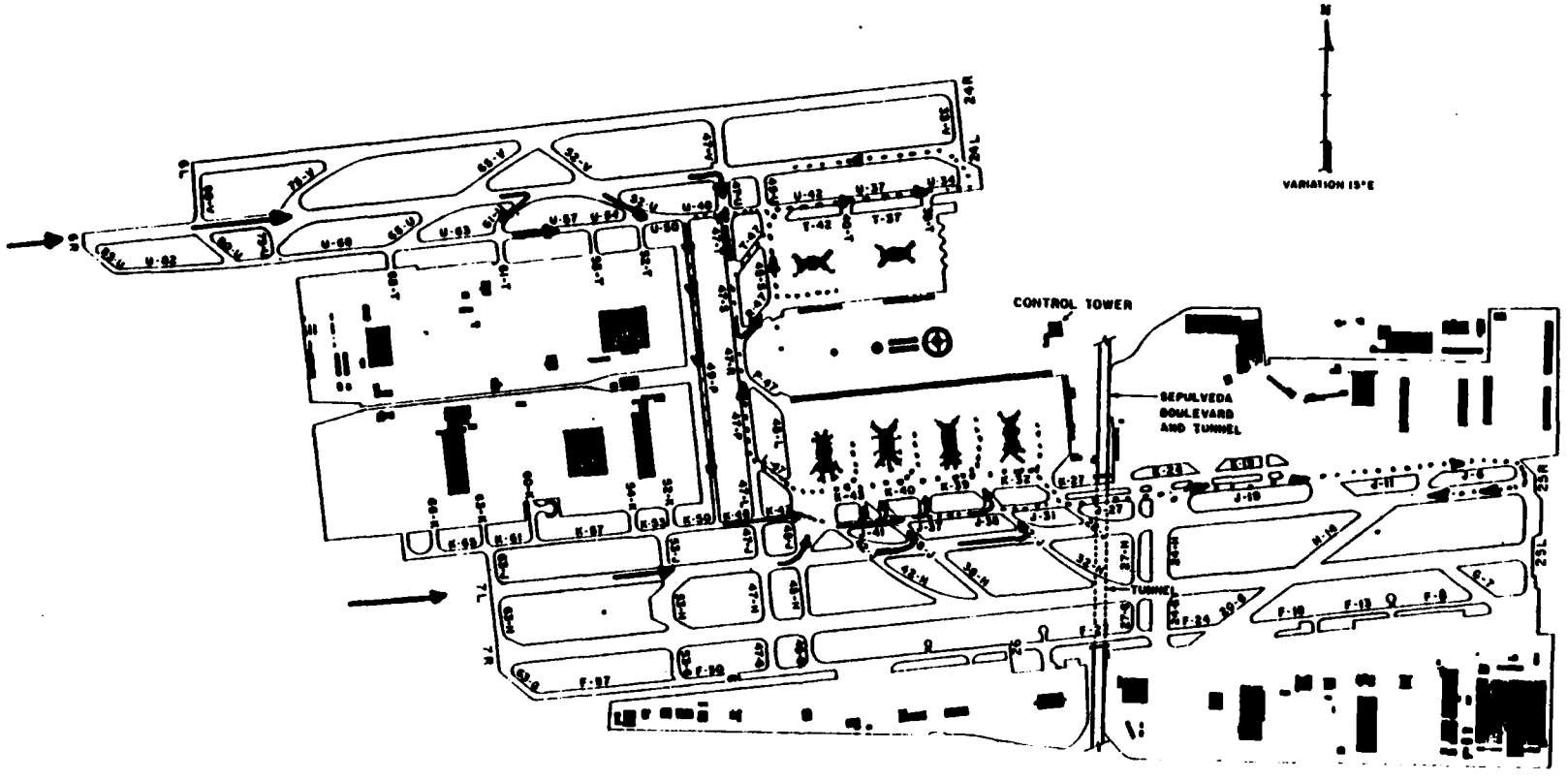
1	1	3							[28
317	.07	320	.86	323	.07				
2	1	5							[37
307	.27	312	.08	317	.32	320	.30	323	.0:
3	1	3							[104
307	.78	312	.02	317	.20				
4	1	2							[21
307	.86	317	.14						
1	2	4							[15
310	.07	313	.13	315	.33	318	.47		
2	2	6							[17
145	.02	305	.24	310	.08	313	.03	315	.3
318	.33								
3	2	6							[30
145	.33	305	.50	310	.07	313	.04	315	.0:
318	.03								
4	2	2							[4
145	.99	305	.01						
1	3	2							[2
274	.99	271	.01						
2	3	3							[269
277	.44	274	.37	271	.19				
3	3	4							[20
277	.45	274	.05	271	.30	268	.20		
4	3	2							[18
277	.99	271	.01						
1	4	5							[89
275	.06	272	.18	269	.40	266	.09	262	.0[illegible]
2	4	5							[215
275	.09	272	.36	269	.40	266	.09	262	.0[illegible]
3	4	6							[48
275	.19	272	.06	269	.04	266	.10	262	.0[illegible]
284	.55	4							
4	4								[18
275	.22	272	.17	269	.11	284	.50		

TAXIWAY SPEEDS

5.00	10.00	15.00	23.00	25.00	35.00

FIX TRAVEL TIMES

FIX	RUNWAY	CLASS	DISTANCE	SPEED
1→4	1→2	1	25.5	204.0
1	1	2	25.5	191.3
1	1	3	25.5	180.0
1	1	4	25.5	180.0
1	2	1	24.0	192.0
1	2	2	24.0	192.0
1	2	3	24.0	180.0
1	2	4	24.0	180.0
1	3	1	24.0	192.0
1	3	2	24.0	192.0
1	3	3	24.0	192.0
1	3	4	24.0	180.0
1	4	1	24.0	192.0
1	4	2	24.0	192.0
1	4	3	24.0	180.0
1	4	4	24.0	180.0
2→3	1	1	25.5	191.3
2	1	2	25.5	191.3
2	1	3	25.5	191.3
2	1	4	25.5	180.0
2	2	1	22.5	192.9
2	2	2	22.5	192.9
2	2	3	22.5	180.0
2	2	4	0.	0.
2	3	1	0.	0.
2	3	2	21.0	210.0
2	3	3	21.0	180.0
2	3	4	0.	0.
2	4	1	18.0	180.0
2	4	2	18.0	180.0
2	4	3	18.0	180.0
2	4	4	18.0	180.0
3→2	1	1	28.5	180.0
3	1	2	28.5	180.0
3	1	3	28.5	180.0
3	1	4	0.	0.
3	2	1	0.	0.
3	2	2	0.	0.
3	2	3	31.5	180.0
3	2	4	0.	0.
3	3	1	0.	0.
3	3	2	36.0	180.0
3	3	3	36.0	180.0
3	3	4	0.	0.
3	4	1	0.	0.
3	4	2	0.	0.
3	4	3	18.0	180.0
3	4	4	0.	0.
4	1	1	36.0	196.4
4	1	2	36.0	180.0
4	1	3	36.0	180.0
4	1	4	0.	0.
4	2	1	33.0	180.0
4	2	2	33.0	180.0
4	2	3	0.	0.
4	2	4	0.	0.
4	3	1	0.	0.
4	3	2	34.5	197.1
4	3	3	34.5	180.0
4	3	4	0.	0.
4	4	1	0.	0.
4	4	2	31.5	180.0
4	4	3	31.5	180.0
4	4	4	0.	0.
5	1	1	0.	0.
5	1	2	18.0	180.0
5	1	3	18.0	180.0
5	1	4	18.0	180.0
5	2	1	0.	0.
5	2	2	22.5	192.9
5	2	3	22.5	180.0
5	2	4	0.	0.
5	3	1	0.	0.
5	3	2	18.0	180.0
5	3	3	18.0	180.0
5	3	4	0.	0.
5	4	1	0.	0.
5	4	2	21.0	180.0
5	4	3	0.	0.
5	4	4	0.	0.
6	1	1	0.	0.
6	1	2	0.	0.
6	1	3	18.0	180.0
6	1	4	0.	0.
6	2	1	0.	0.
6	2	2	0.	0.
6	2	3	18.0	180.0
6	2	4	18.0	180.0
6	3	1	0.	0.
6	3	2	18.0	180.0
6	3	3	0.	0.
6	3	4	0.	0.
6	4	1	0.	0.
6	4	2	0.	0.
6	4	3	18.0	180.0
6	4	4	18.0	180.0
7	4	1	0.	0.
7	4	2	18.0	180.0
7	4	3	0.	0.
7	4	4	18.0	180.0



Configuration B
Figure 3

RWY NAMES
06R 07L 24L 25R

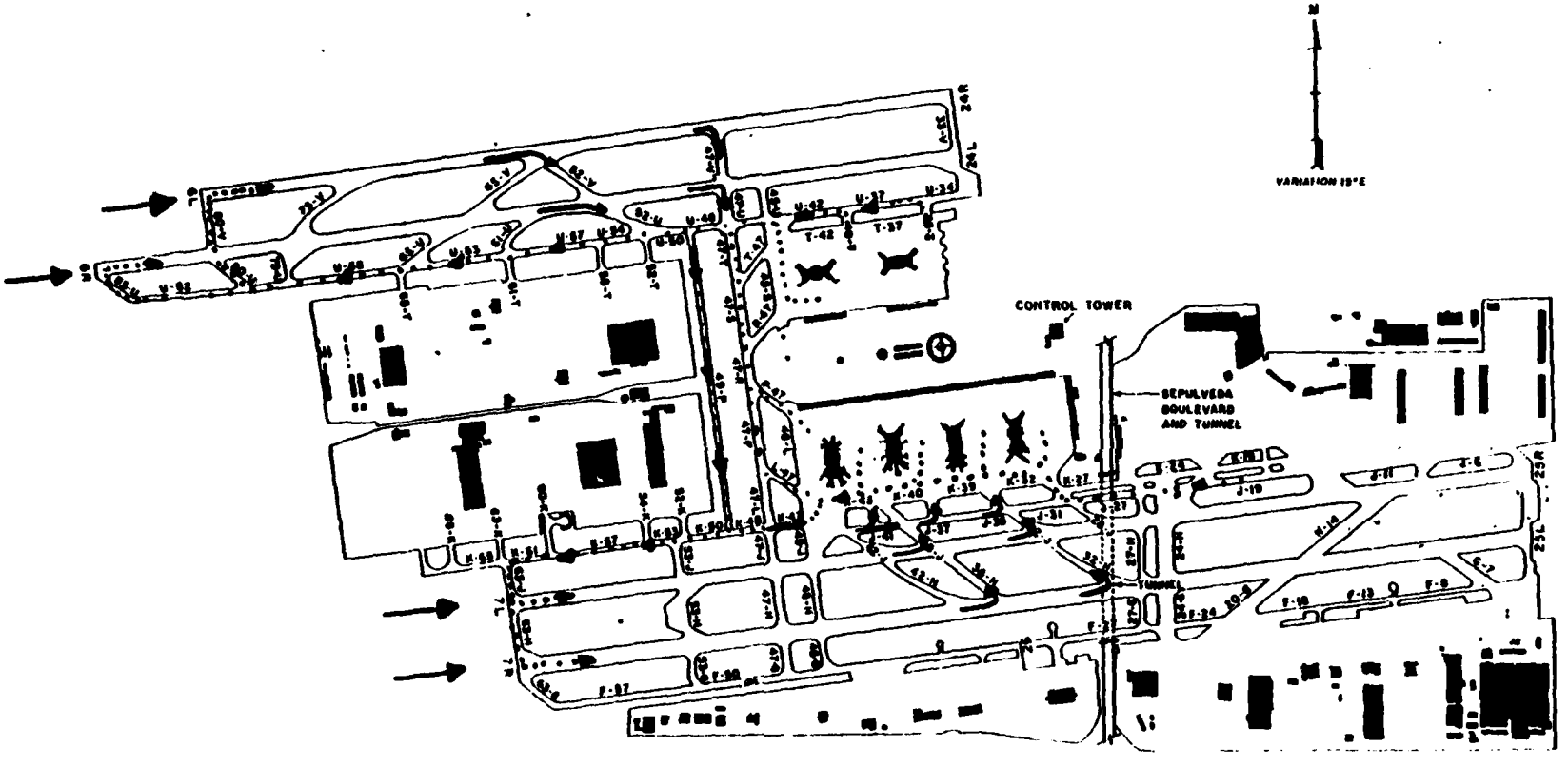
RWY END LINKS
151 422 423 411

LOS ANGELES CONFIGURATION 6

TAXIWAY TWO-WAY

002
359 331
002
331 359
002
355 206
002
206 355
002
353 205
002
205 353
002
352 204
002
204 352
002
361 146
002
146 361
002
146 361
007
361 146 336 337 338 339 340
007
340 339 338 337 336 146 361
002
366 250
002
250 366
006
366 250 176 360 177 357
006
357 177 360 176 250 366
003
206 355 208
003
208 355 206
003
205 353 210
003
210 353 205
004
204 352 211 351
004
351 211 352 204
003
203 185 350
003
350 185 203
005
113 114 115 116 350
005
350 116 115 114 113
006
202 113 114 115 116 350

006						
350	116	115	114	113	202	
005						
330	126	359	125	357		
005						
357	125	359	126	330		
004						
331	359	125	357			
004						
357	125	359	331			
002						
361	146					



Configuration C
Figure 4

R/T NAMES

06R 06L 07R 07L

R/T END LINKS 12

151 323 410 422

TAXIWAY TWO-WAY

LOS ANGELES CONFIGURATION C

004
363 164 303 362

004
362 303 164 363

006
363 164 303 362 302 301

006
301 302 362 303 164 363

005
164 303 362 302 301

005
301 302 362 303 164

002
368 250

002
250 366

006
366 250 176 360 177 357

006
357 177 360 176 250 366

008
330 126 359 125 357 177 360 176

006
176 360 177 357 125 359 126 330

005
330 126 359 125 357

005
357 125 359 126 330

007
331 359 125 357 177 360 176

007
176 360 177 357 125 359 331

004
331 359 125 357

004
357 125 359 331

010
246 247 248 249 366 250 176 360 177 357

010
357 177 360 176 250 366 249 248 247 246

008
246 247 248 249 366 250 176 360

008
360 176 250 366 249 248 247 246

006
202 113 114 115 116 350

006
350 116 115 114 113 202

005
113 114 115 116 350

005
350 116 115 114 113

Attachment B

PRELIMINARY CALIBRATION DATA PACKAGE

Los Angeles International Airport

Los Angeles
Airport Improvement Task Force Delay Studies

November 1978

CALIBRATION MODEL
INPUT DATA

A. LOGISTICS

1. Title: Los Angeles International Airport Airfield Simulation Model Calibration Run

2. Random Number Seeds: 82651, 91921, 69011, 92157, 14577, 10493, 27011, 40961, 15011, 63661

3. Start and Finish Times: Thursday, 9/28/77, 1100 (a.m.) to 1400 (p.m.)

4. Print Options: Detailed run for one random number seed. Summary run for ten random number seeds.

5. Airline Names:

Name	Code
Pan American	PA
PSA	PS
Saturn	KS
Scandinavian	SK
Seaboard World	SB
Texas International	TI
Trans World	TW
United	UA
Varig	RG
Western	WA
World	WO
Trans-International	TV
Korean	KE
Redwing	RWG
Air Los Angeles	ALS
Golden West	GLW
Riverside	RAS
Swift Aire	SWT
Sky Train	TNA
Sierra Pacific	SPA
Pinky	PKY
Douglas Racer	DRZ
American	AA
Air Canada	AC
Aelmeas Argentina	AR
Air Mexico	AM
Air France	AF
Air Lift	RD

Name	Code
Air New Zealand	TE
Hughes Air West	RW
Air Uta	UT
Aviania	AV
Braniff	BN
Caldeonia	BR
Capital	CL
Continental	CO
Delta	DL
Eastern	EA
Flying Tiger	FT
Lufthansa	LH
Japan	JL
Mexicana	MX
National	NA
Northwest	NW
Empress	CP
Overseas National	OV

6. Processing Options: First run to check input. Other runs in COMPUTE mode.

7. Truncation Limits: ±3 standard deviations.

8. Time Switch: Not applicable.

B. AIRFIELD PHYSICAL CHARACTERISTICS

9. Airfield Network:
10. Number of Runways:
11. Runway Identification:
12. Departure Runway End Links:
13. Runway Crossing Links:
14. Exit Taxiway Location:
15. Holding Areas:
16. Airline Gates:

Configuration "A"

Attachment A

Page 3

17. General Aviation Basing Areas:

C. ATC PROCEDURES

18. Aircraft Separations:

Arrival-Arrival Separation (nmi)

1. VFR: Accounting to Report No. FAA-EM-78-8.

		Trail Aircraft Class			
		A	B	C	D
Lead Aircraft Class	A	1.9	1.9	1.9	1.9
	B	1.9	1.9	1.9	1.9
	C	2.7	2.7	1.9	1.9
	D	4.5	4.5	3.6	2.7

2. IFR: Calibration to be done includes VFR only.

Departure-Departure Separations (seconds)

1. VFR:

		Trail Aircraft Class			
		A	B	C	D
Lead Aircraft Class	A	35	35	45	50
	B	35	35	45	50
	C	50	50	60	60
	D	120	120	120	90

2. IFR: Calibration to be done includes VFR only.

Departure-Arrival Separation (nmi):

1. VFR:

		Trail Aircraft Class			
		A	B	C	D
Lead Aircraft Class	A B C D	To be based on reduced field data or departure runway occupancy times.			

2. IFR: Calibration to be done includes VFR only.

Arrival-Departure Separation (seconds):

1. VFR:

		Trail Aircraft Class			
		A	B	C	D
Lead Aircraft Class	A B C D	To be based on reduced field data or arrival runway occupancy times.			

2. IFR: Calibration to be done includes VFR only.

19. Route Data: Configuration "A," Attachment A, Page 3

20. Two-Way Path Data: Configuration "A," Attachment A, Page 3

21. Common Approach Paths:

Aircraft Class	Length of Common Approach Path
A	6.0
B	6.0
C	6.0
D	6.0

22. Vectoring Delays:

This input allocates delays among vectoring and holding. Model input values will be used that hold arrival aircraft if delays to arrival aircraft exceed 10 minutes.

23. Departure Runway Queue Control:

Aircraft are assigned departure runways to preclude airspace crossovers, not to balance departure queues.

24. Gate Hold Control:

Aircraft are held at gates when departure queue at runway is 10 or more, except when gate holds would cause gate congestion.

25. Departure Airspace Constraints:

Aircraft are not held at gates due to departure airspace constraints.

26. Inter-Arrival Gap:

With this runway use, arrival aircraft are delayed in the arrival airspace when departure delays exceed 10 minutes.

27. Runway Crossing Delay Control:

Arrival and departure runway operations are only interrupted for a taxiing aircraft to cross an active runway when the taxiing aircraft is delayed by 10 minutes or more.

D. AIRCRAFT OPERATIONAL CHARACTERISTICS

28. Exit Taxiway Utilization: Configuration "A," Attachment A, Page 3

29. Arrival Runway Occupancy Times:

			Runway Occupancy Times (Seconds)					
		Class	307	312	317	320	323	
Runway 24R	(42)	A	36					
	(50)	B	33	41	38			
	(50)	C	31	37	43	46		
	(56)	D				54		

			Runway Occupancy Times (Seconds)					
		Class	145	305	310	313	315	318
Runway 24L	(44)	A	35					
	(47)	B	31	36		46		
	(50)	C	35			54	39	
	(56)	D			37		45	56

			Runway Occupancy Times (Seconds)			
		Class	277	274	271	268
Runway 25R	(44)	A	45			
	(45)	B	50		72	
	(45)	C	43	49	51	56
	(52)	D		52		

			Runway Occupancy Times (Seconds)					
		Class	284	275	272	269	266	262
Runway 25L	(43)	A		39	52			
	(47)	B		59	60			
	(47)	C	52	42	44	53	59	62
	(52)	D		61	42	38	67	

30. Touch & Go Occupancy Times: Not applicable.

31. Departure Runway Occupancy Times:

Aircraft Class	Runway Occupancy Time (Seconds) Mean	Standard Deviation
A	34	4
B	34	4
C	39	4
D	39	4

32. Taxi Speeds: Configuration "A," Attachment A, Page 3

33. Approach Speeds:

Aircraft Class	Approach Speed (knots) Mean	Standard Deviation
A	120	10
B	120	10
C	130	10
D	140	10

34. Gate Service Times: Not applicable to calibration.

35. Airspace Travel Times: Configuration "A," Attachment A, Page 3.

36. Runway Crossing Times: P.M.M. data.

37. Lateness Distribution: Not applicable to calibration.

38. Demand: To be based on reduced field data.

Attachment C

PRELIMINARY ANNUAL DELAY BASELINE DATA PACKAGE

Los Angeles International Airport

Los Angeles
Airport Improvement Task Force Delay Studies

November 1978

1. Annual Demand: 500,976 (1977)

2. Group Specification:

3 day groups	:	High, Average, Low
12 week groups	:	12 months, January through December
3 weather groups	:	VFR, IFR1, IFR2

7 runway uses	: Arrivals Runway	Departures Runway
1.	24LR, 25LR	24LR, 25LR
2.	24LR, 25LR	24L, 25R
3.	24R, 25L	24L, 25R
4.	6R, 7L	24L, 25R
5.	6LR, 7LR	6LR, 7LR
6.	6LR, 7LR	6R, 7L
7.	6L, 7R	6R, 7L

3,4. Traffic Distribution:

Week Group	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% of annual in one week	1.83	1.83	1.88	1.88	1.87	1.98	2.00	2.04	1.98	1.91	1.93	1.86
Number of weeks in month	4.43	4.00	4.43	4.29	4.43	4.29	4.43	4.43	4.29	4.43	4.29	4.43
% of annual in month	8.12	7.32	8.32	8.07	8.30	8.51	8.84	9.05	8.51	8.44	8.28	8.24

5,6. Daily Traffic Distribution:

Day Group	High	Average	Low
% of weekly in one day	15.21	14.58	12.92
Number of days	2	3	2
% of weekly traffic in day group	30.43	43.73	25.84

7. Weather Occurrences:

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
%VFR												
%IFR1												
%IFR2												

Being compiled by LAX Tower Personnel

8. Hourly Runway Capacity Parameters:

Runway Use	Hourly Capacity (Operations/hour) VFR	IFR1	IFR2
1			
2			
3			
4	To be computed by NAFEC with Airport Capacity Model		
5			
6			
7			

9. Runway Use/Weather Group Demand Factors:

For all runway uses:

Weather VFR	IFR1	IFR2
1.0	1.0	0.95

10. Runway Use Occurrences:

Runway Use	Percent Occurrence VFR	IFR1	IFR2
1			
2			
3			
4	To be computed from PMS data subject to review of Los Angeles Tower personnel		
5			
6			
7			

11. Hourly Traffic:

Hour	% daily traffic	Hour	% daily traffic	Hour	% daily traffic	Hour	%daily traffic
00-01	2.7	06-07	1.9	12-13	6.5	18-19	6.5
01-02	1.5	07-08	4.6	13-14	5.7	19-20	6.5
02-03	0.9	08-09	6.8	14-15	4.8	20-21	4.8
03-04	0.6	09-10	5.4	15-16	5.7	21-22	4.8
04-05	0.5	10-11	6.0	16-17	4.8	22-23	4.4
05-06	0.5	11-12	5.8	17-18	5.2	23-24	3.1

12,13. Delay Curve Specification: To be determined after airfield simulation runs.

14. Percent Arrivals:

Hour	%Arrivals	Hour	%Arrivals	Hour	%Arrivals	Hour	%Arrivals
00-01	50	06-07	54	12-13	46	18-19	59
01-02	50	07-08	44	13-14	35	19-20	57
02-03	55	08-09	36	14-15	58	20-21	61
03-04	43	09-10	31	15-16	54	21-22	58
04-05	83	10-11	49	16-17	52	22-23	44
05-06	67	11-12	58	17-18	54	23-24	54

15. Cancellation Diversion Specification: To be provided by Task Force.

16. User-Specified Title: LAX ANNUAL BASELINE